

< 의생명신호처리 (Biomedical Signal Processing) 2023 Spring – MD4301/5301 >

- Prof.: 이보름 (Lee, Boreom) (office: GCRF Room 408, T: 3272)
- Teaching Assistant: 한승현 (Han, Seunghyeon) (Room: Dasan Building Room 421, T: 3246)
- Text: Wim van Drongelen, "Signal Processing for Neuroscientists (2<sup>nd</sup> edition)," Academic Press, 2018 (PDF ebook available from GIST library)
- Classroom: Dasan Building Room 115
- Lecture note: <https://bmis.gist.ac.kr/bmssa/> → lecture
- Assessment: mid-term & final exam 90 %, attendance 10%
- Class schedule

1 week: Introduction, Data Acquisition

2 week: Noise, Signal Averaging

3 week: Real and Complex Fourier Series

4 week: Continuous, Discrete, and Fast Fourier Transform

5 week: 1-D and 2-D Fourier Transform Applications

6 week: Lomb's Algorithm and Multitaper Power Spectrum Estimation

7 week: Laplace and z-Transform

8 week: Mid-term Exam

9 week: LTI Systems, Convolution, Correlation, Coherence and Hilbert Transform

10 week: Causality, Kalman filter

11 week: Introduction to Filters: the RC Circuit and Analysis

12 week: Filters: Specification, Bode Plot, Nyquist Plot & Digital Filters

13 week: Spike Train Analysis

14 week: Wavelet Analysis: Time & Frequency Domain Properties

15 week: Decomposition of Multichannel Data

16 week: Final Exam